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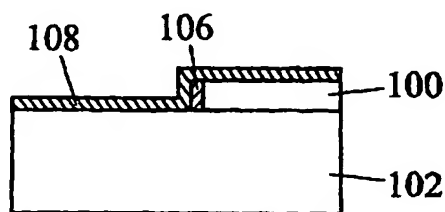
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(54) Title: METHOD AND SYSTEMS FOR SINGLE- OR MULTI-PERIOD EDGE DEFINITION LITHOGRAPHY



sidewalls of the first (104) and second (108) masking materials. One of the first (104) and second (108) masking materials may then be etched from the substrate (102) to leave nanometer-pitched channels (114) in one of the masking materials. The channels (114) may be used to etch nanometer-pitched features in the substrate (102).

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/08724

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 21/338, 21/336

US CL : 438/173, 268, 274

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 438/173, 268, 274, 142, 175, 197, 212,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,214,246 B1 (CRAIGHEAD) 10 April 10 2001 (04.10.2001), Figs. 8-9; Col. 9, lines 12-35.	1-24
Y	JP 2003-045325 A (HATAI et al.) 14 February 14 2003 (14.02.2003), Abstract; Figs. 1(a) - 1(f).	1-24
Y,P	EP 1319948 A2 (DONG) 18 June 2003 (18.06.2003), Abstract; Col. 7, line 34 - Col. 8, line 34; Figs. 2-8.	1-24
Y,P	US 6,593,065 B2 (SCHERER) 15 July 2003 (15.07.2003), Figs. 1(a) - 1(d) and 4 - 5(f); Col. 3, line 21 - Col. 5, line 5.	1-24
A	JP 2003-073859 A (WADA et al.) 12 March 2003 (12.03.2003)	1-24
Y,T	US 6,709,929 B2 (ZHANG et al.) 23 March 2004 (23.03.2004), Figs. 2A - 5F, Col. 6, line 36 - Col. 11, line 24.	1-24
Y,P	JP 2004-034270 A (II et al.) 05 February 2004 (05.02.2004), Abstract, Fig. 4.	1-24

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/08724

Continuation of B. **FIELDS SEARCHED** Item 3:
EAST (USPAT, USPGPUB, EPO, JPO, DEWENT, IBMTDB)
(nanometer or nonoscale) same (groove or mesa or trench or hole); etch\$3 or pattern\$4; channel with substrate